

Application No.: 09/871,212

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AMENDMENTS**In the claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Original): A bovine adenovirus vector comprising a modification in a polynucleotide encoding a capsid protein, or fragment thereof, wherein said capsid protein, or fragment thereof, is associated with tropism and wherein said modification is associated with altered tropism.

Claim 2 (Currently amended): The adenovirus vector of claim 1 wherein said polynucleotide encoding a capsid protein, or fragment thereof, is replaced with a polynucleotide encoding a heterologous mammalian adenovirus capsid protein, or fragment thereof.

Claim 3 (Withdrawn): The adenovirus vector of claim 1 wherein said capsid protein, or fragment thereof, is a penton protein, or fragment thereof.

Claim 4 (Withdrawn): The adenovirus vector of claim 1 wherein said capsid protein, or fragment thereof, is a hexon protein, or fragment thereof.

Claim 5 (Original): The adenovirus vector of claim 1 wherein said capsid protein, or fragment thereof, is a fiber protein, or fragment thereof.

Claim 6 (Currently amended): The adenovirus vector of claim 5 wherein the fiber protein, or fragment thereof, comprises ~~modification is in~~ the knob region of a fiber protein.

Claim 7 (Withdrawn-currently amended): The adenovirus vector of claim 3 wherein said ~~bovine adenovirus~~ polynucleotide encoding the penton region protein, or fragment thereof, is replaced with at least one polynucleotide encoding a heterologous mammalian adenovirus ~~penton adenovirus region~~ protein, or fragment thereof.

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Claim 8 (Withdrawn-currently amended): The adenovirus vector of claim 4 wherein said ~~bovine adenovirus~~ polynucleotide encoding the hexon region protein, or fragment thereof, is replaced with at least one polynucleotide encoding a heterologous mammalian adenovirus hexon region protein, or fragment thereof.

Claim 9 (Currently amended): The adenovirus vector of claim 5 wherein said ~~bovine adenovirus~~ polynucleotide encoding the fiber region protein, or fragment thereof, is replaced with at least one polynucleotide encoding a heterologous mammalian adenovirus fiber region protein or fragment thereof.

Claim 10 (Original): The adenovirus vector of claim 2 wherein said heterologous mammalian adenovirus capsid protein, or fragment thereof, includes porcine, ovine, canine or human adenovirus capsid protein, or fragment thereof.

Claim 11 (Original): The adenovirus vector of claim 10 wherein said heterologous mammalian adenovirus capsid protein, or fragment thereof, is a human adenovirus capsid protein, or fragment thereof.

Claim 12 (Original): The adenovirus vector of claim 1 wherein said adenovirus is a sub-type 1 adenovirus.

Claim 13 (Original): The adenovirus vector of claim 1 wherein said adenovirus is a sub-type 2 adenovirus.

Claim 14 (Original): The adenovirus vector of claim 12 wherein said adenovirus vector is BAV3.

Claim 15 (Currently amended): The adenovirus vector of claim 14 wherein said modification in a polynucleotide encoding a capsid protein, or fragment thereof, is a replacement of

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a polynucleotide encoding a BAV3 fiber protein, or fragment thereof, with a polynucleotide encoding a heterologous mammalian adenovirus fiber protein, or fragment thereof.

Claim 16 (Currently amended): The adenovirus vector of claim 15 wherein said mammalian adenovirus fiber protein, or fragment thereof, includes bovine, porcine, ovine, canine or human adenovirus fiber protein, or a fragment thereof.

Claim 17 (Original): The adenovirus vector of claim 16 wherein said mammalian adenovirus fiber protein is a human adenovirus fiber protein.

Claim 18 (Withdrawn): The adenovirus vector of claim 1 wherein said vector lacks E1 function.

Claim 19 (Withdrawn): The adenovirus vector of claim 18 wherein said vector has a deletion of part or all of the E1 gene region.

Claim 20 (Withdrawn): The adenovirus vector of claim 1 wherein said vector has a deletion of part or all of the E3 gene region.

Claim 21 (Original): The adenovirus vector of claim 1 wherein said vector further comprises a polynucleotide encoding a heterologous protein.

Claim 22 (Currently amended): The adenovirus vector of claim 21 wherein said heterologous protein includes cytokines; lymphokines; membrane receptors recognized by pathogenic organisms[.]; dystrophins; insulin; proteins participating in cellular ion channels; antisense RNAs; proteins capable of inhibiting the activity of a protein produced by a pathogenic gene[.]; a protein inhibiting an enzyme activity[.]; protein variants of pathogenic proteins; antigenic epitopes; major histocompatibility complex classes I and II proteins; antibodies; immunotoxins; toxins; growth factors or growth hormones; cell receptors or their ligands; tumor suppressors; cellular enzymes; or suicide genes.

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Claim 23 (Withdrawn): The adenovirus vector of claim 22 wherein said polynucleotide encoding said heterologous protein is inserted in the adenovirus E1 gene region.

Claim 24 (Withdrawn): The adenovirus vector of claim 22 wherein said polynucleotide encoding said heterologous protein is inserted in the adenovirus E3 gene region.

Claim 25 (Original): The adenovirus vector of claim 1 wherein said vector is replication-competent.

Claim 26. (Withdrawn): The adenovirus vector of claim 1 wherein said vector is replication-defective.

Claim 27 (Original): A host cell comprising the bovine adenovirus vector of claim 1.

Claim 28 (Original): A host cell comprising the bovine adenovirus vector of claim 21.

Claim 29 (Withdrawn): A method of producing a recombinant bovine adenovirus vector comprising a modification in a polynucleotide encoding a capsid protein, or a fragment thereof, comprising the steps of, obtaining a bovine adenovirus vector; and introducing a modification into a polynucleotide encoding a capsid protein, or fragment thereof, wherein said capsid protein, or fragment thereof, is associated with tropism and wherein said modification is associated with altered tropism.

Claim 30 (Withdrawn): The method of claim 29 wherein said capsid protein, or fragment thereof, is a penton protein, or fragment thereof.

Claim 31 (Withdrawn): The method of claim 29 wherein said capsid protein, or fragment thereof, is a hexon protein, or fragment thereof.

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Claim 32 (Withdrawn): The method of claim 29 wherein said capsid protein, or fragment thereof, is a fiber protein, or fragment thereof.

Claim 33 (Withdrawn): The method of claim 29 wherein said adenovirus vector further comprises a polynucleotide encoding a heterologous protein.

Claim 34 (Withdrawn): The method of claim 29 wherein said bovine adenovirus is a subtype 1 bovine adenovirus.

Claim 35 (Original): A recombinant bovine adenovirus comprising a modification in a polynucleotide encoding a capsid protein, or fragment thereof, wherein said capsid protein, or fragment thereof, is associated with tropism and wherein said modification is associated with altered tropism.

Claim 36 (Withdrawn): The recombinant adenovirus of claim 35 further comprising a polynucleotide encoding a heterologous protein.

Claim 37 (Withdrawn): The recombinant adenovirus of claim 36 wherein said polynucleotide encoding said heterologous protein is inserted in the adenovirus E1 gene region.

Claim 38 (Withdrawn): The recombinant adenovirus of claim 36 wherein said polynucleotide encoding said heterologous protein is inserted in the adenovirus E3 gene region.

Claim 39 (Withdrawn): The recombinant adenovirus of claim 35 wherein said capsid protein, or fragment thereof, is a penton protein, or fragment thereof.

Claim 40 (Withdrawn): The recombinant adenovirus of claim 35 wherein said capsid protein, or fragment thereof, is a hexon protein, or fragment thereof.

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Claim 41 (Original): The recombinant adenovirus of claim 35 wherein said capsid protein, or fragment thereof, is a fiber protein, or fragment thereof.

Claim 42 (Currently amended): The recombinant adenovirus of claim 41 wherein the ~~modification is in~~ fiber protein, or fragment thereof comprises the knob region of a fiber protein.

Claim 43 (Currently amended): An immunogenic composition comprising a bovine adenovirus wherein said adenovirus comprises a modification in a polynucleotide encoding a ~~modification in~~ a capsid protein, or fragment thereof, and wherein said capsid protein, or fragment thereof, is associated with tropism and wherein said modification is associated with altered tropism.

Claim 44 (Withdrawn): The immunogenic composition of claim 43 wherein said capsid protein is a penton protein, or fragment thereof.

Claim 45 (Withdrawn): The immunogenic composition of claim 43 wherein said capsid protein is a hexon protein, or fragment thereof.

Claim 46 (Original): The immunogenic composition of claim 43 wherein said capsid protein is a fiber protein, or fragment thereof.

Claim 47 (Currently amended): The immunogenic composition of claim 46 wherein said ~~capsid~~ fiber protein, or fragment thereof, ~~[[is a]]~~ comprises the knob domain region of a fiber protein.

Claim 48 (Currently amended): The immunogenic composition of claim 43 wherein said modification in a polynucleotide encoding a capsid protein or fragment thereof is a replacement of a polynucleotide encoding a bovine fiber protein, or fragment thereof, with a polynucleotide encoding a mammalian adenovirus fiber protein, or fragment thereof.

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Claim 49 (Currently amended): The immunogenic composition of claim 48 wherein said mammalian adenovirus fiber protein, or fragment thereof, is a human adenovirus fiber protein, or fragment thereof.

Claim 50 (Original): The immunogenic composition of claim 43 wherein said bovine adenovirus is a sub-type 1 adenovirus.

Claim 51 (Original): The immunogenic composition of claim 50 wherein said bovine adenovirus is BAV3.

Claim 52 (Withdrawn): The immunogenic composition of claim 43 wherein said bovine adenovirus comprises a polynucleotide encoding a heterologous protein.

Claim 53 (Withdrawn): A pharmaceutical composition capable of inducing an immune response in a mammalian subject, said composition comprising the immunogenic composition of claim 52.

Claim 54 (Withdrawn): The pharmaceutical composition of claim 53 further comprising a pharmaceutically acceptable excipient.

Claim 55 (Withdrawn): A method for eliciting an immune response in a mammalian host to protect against infection, the method comprising administration of the pharmaceutical composition of claim 54.

Claim 56 (Withdrawn-currently amended): The method of claim 55 wherein said heterologous protein includes cytokines; lymphokines; membrane receptors recognized by pathogenic organisms[[.]], dystrophins; insulin; proteins participating in cellular ion channels; antisense RNAs; proteins capable of inhibiting the activity of a protein produced by a pathogenic gene[[.]]; a protein inhibiting an enzyme activity[[.]]; protein variants of pathogenic proteins; antigenic epitopes; major histocompatibility complex classes I and II proteins; antibodies;

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immunotoxins; toxins; growth factors or growth hormones; cell receptors or their ligands; tumor suppressors; cellular enzymes; or suicide genes.

Claim 57 (Withdrawn-currently amended): A method of gene delivery in a mammalian host, the method comprising administering to the host a bovine adenovirus vector comprising a modification in a polynucleotide encoding a modified capsid protein, or fragment thereof, wherein the capsid protein is associated with tropism and wherein the modification is associated with altered tropism and wherein the adenovirus vector further comprises a polynucleotide encoding a heterologous protein.

Claim 58 (Withdrawn): The method of claim 57 wherein said heterologous polynucleotide encodes a therapeutic protein.

Claim 59 (Withdrawn): The method of claim 57 wherein said capsid protein, or fragment thereof, is a penton protein, or fragment thereof.

Claim 60 (Withdrawn): The method of claim 57 wherein said capsid protein, or fragment thereof, is a hexon protein, or fragment thereof.

Claim 61 (Withdrawn): The method of claim 57 wherein said capsid protein, or fragment thereof, is a fiber protein, or fragment thereof.

Claim 62 (Withdrawn-currently amended): The method of claim 61 wherein the ~~modification is in~~ fiber protein, or fragment thereof, comprises the knob region of a fiber protein.

Claim 63 (Withdrawn-currently amended): The method of claim 57 wherein said mammalian host is human and said modification in a polynucleotide encoding a capsid protein is a replacement of a polynucleotide encoding a bovine adenovirus fiber protein, or fragment thereof, with a polynucleotide encoding a human fiber protein, or fragment thereof.

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Claim 64 (New): A composition comprising the adenovirus vector of claim 1.

Claim 65 (New): A composition comprising the adenovirus vector of claim 5.

Claim 66 (New): A composition comprising the adenovirus vector of claim 21.

Claim 67 (New): A composition comprising the adenovirus of claim 35.

Claim 68 (New): A composition comprising the adenovirus of claim 41.

Claim 69 (New): The immunogenic composition of claim 48 wherein said mammalian adenovirus fiber protein, or fragment thereof, includes porcine, ovine, canine or human adenovirus capsid protein, or fragment thereof.

Claim 70 (New): A host cell comprising the adenovirus vector of claim 5.

Claim 71 (New): A host cell comprising the adenovirus of claim 35.

Claim 72 (New): A host cell comprising the adenovirus of claim 41.

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